CIVIL TECH LABS

Accredited by NABL as per ISO/ IEC 17025 : 2005

5, 1st Cross, Srinivasa Colony, Mission Road, Bangalore - 560027

Ph: 080 - 4114 2867 / Mob. : 96862 31801, Email: civiltechlabs@gmail.com

T-2654

To,

Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP,
Bangalore.

01st June 2016

Dear Sir,

Sub: Testing of Materials.

As requested, tests on physical properties were carried out for the Materials supplied by you, for the work of **'Improvements of drains and Construction of Culvetrs in ward no. 06 Bytarayanapura Sub Division.**
No: BBMP/EE/BTP/WO/38/2016-17.'

Please find the enclosed Test Reports of the above.

Thanking You,
For Civil Tech Labs

AE-06
n/a
ON

Roopa.G

CIVIL TECH LABS BANGALORE

(ROOPA G.)
Technical Manager

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TEST REPORT

TEST ON WBM Grade-3 MIX

Name & Address of the Customer	AEE, Byatarayanapura Sub Division, BBMP.
Name of Work	Improvements of drains and Construction of Culvetrs in ward no. 06 Bytarayanapura Sub Division. No: BBMP/EE/BTP/WO/38/2016-17.
Name of the Agency	Sri. G. Manjunath
Date of Testing	10/06/2016
Reference	**MORTH Table 400-7**

IS Sieve Designation	% By Weight Passing IS Sieve	Actual % By Weight Passing IS Sieve	Remarks
63 mm	100	**100**	**Satisfies the Requirements**
53 mm	95-100	**98.6**	
45 mm	65-90	**72.3**	
22.4 mm	0-10	**7.6**	
11.2 mm	0-5	**3.5**	

Note:

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3.Any correction invalidates this report.

4.The results are based on the test conducted on samples supplied by the customer.

AE-06
n/a

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TEST REPORT

LIQUID LIMIT AND PLASTICITY INDEX TEST ON WATER BOUND MACADAM GRADE III

Name & Address of the Customer	AEE, Byatarayanapura Sub Division, BBMP.
Name of Work	Improvements of drains and Construction of Culvetrs in ward no. 06 Bytarayanapura Sub Division. No: BBMP/EE/BTP/WO/38/2016-17.
Name of the Agency	Sri. G. Manjunath
Date of Testing	10/06/2016

PLASTICITY INDEX (PI)			
LIQUID LIMIT (LL) in %	**PLASTIC LIMIT (PL) in %**	**PLASTICITY INDEX (PI) = (LL - PL) in %**	**REMARKS**
15.9	11.5	4.4	**Satifies The Requirements** (As Per Morth Clause 404.2.6 LI & PI should be less than 20 % and 6 % respectively)

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Roopa.G

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TEST REPORT

TEST ON AGGREGATES ('AIV' & Flakiness Index)

Water Bound Macadam Grade III

Name & Address of the Customer	AEE, Byatarayanapura Sub Division, BBMP.
Name of Work	Improvements of drains and Construction of Culvetrs in ward no. 06 Bytarayanapura Sub Division. No: BBMP/EE/BTP/WO/38/2016-17.
Name of the Agency	Sri. G. Manjunath
Date of testing	10/6/2016

Sample No	Aggregate Impact Value 'AIV' in %	Average AIV in %	Remarks
1	24.1	23.2	**Satisfactory** (As per Morth Clause 400-6 for WBM, Maximum allowed AIV is 30%)
2	22.3		

Trial	Result in %	Flakiness Index in %	Remarks
1	23.5	23.5	**Satisfactory** (As per Morth Clause 400-6 for WBM, Maximum allowed is 30 %)
2	24.1		
3	22.8		

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4.The results are based on the test conducted on samples supplied by the client.

AE-06 n/a

Roopa.G

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TEST REPORT
WATER ABSORPTION TEST OF ROAD AGGREGATES

Water Bound Macadam Grade III

Name & Adress of the Customer	AEE, Byatarayanapura Sub Division, BBMP.
Name of Work	Improvements of drains and Construction of Culvetrs in ward no. 06 Bytarayanapura Sub Division. No: BBMP/EE/BTP/WO/38/2016-17.
Name of the Agency	Sri. G. Manjunath
Date of Testing	10/06/2016

Method of Test	Sample No.	Water Absorption in %	Average Water Absorption in %	As per Morth Clause 404.2.1 Specification for WBM	Remarks
IS : 2386 (Part 3)	1	1.79	1.81	**2 % Maximum***	Satisfactory
	2	1.81			
	3	1.83			
* If Water Absorption is more than 2 %, Soundness Test to be carried out as per IS : 2386 (Part 5)					

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Roopa.G

(ROOPA G.)
Technical Manager

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AE-06
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T-2654

To,

Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP,

10th June 2016

Dear Sir,

Sub: Testing of Water Bound Macadam.

As requested, tests on physical properties were carried out for the Water Bound Macadam supplied by you, for the work of **'Improvements of drains and Construction of Culvetrs in ward no. 06 Bytarayanapura Sub Division. No: BBMP/EE/BTP/WO/38/2016-17.'**

Please find the enclosed Test Reports of the above.

Thanking You,
For Civil Tech Labs

CIVIL TECH LABS BANGALORE

(ROOPA Q.)
Technical Manager

AE-06
n/a
09

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TEST REPORT

COMPRESSIVE STRENGTH TEST ON CONCRETE CUBES

Name & Address of the Customer	AEE, Byatarayanapura Sub Division, BBMP.
Name of Work	Improvements of drains and Construction of Culvetrs in ward no. 06 Bytarayanapura Sub Division. No: BBMP/EE/BTP/WO/38/2016-17.
Name of Agency	Sri. G. Manjunath
Grade of Concrete	M-20
Location	Drain
No. of cubes tested	3
Technical Reference	IS: 516-1959 (Reaffirmed 2013)

Sl. No.	ID	Dimension of specimen (mm)	Cross sectional area (mm²)	Date of Casting	Date of Testing	Age at test (Days)	Weight (Kg)	Failure Load (KN)	Compressive Strength (N/mm²)	Avg Compressive Strength (N/mm²)
1	Sample-3	150.04 X 150.05 X 150.0	22514	17/06/2016	15/07/2016	28	8.20	500	**22.22**	**22.15**
2		150.02 X 150.03 X 150.0	22508				8.19	490	**21.78**	
3		150.06 X 150.07 X 150.0	22520				8.21	505	**22.44**	

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AE-06
n/a

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TEST REPORT

COMPRESSIVE STRENGTH TEST ON CONCRETE CUBES

Name & Address of the Customer	AEE, Byatarayanapura Sub Division, BBMP.
Name of Work	Improvements of drains and Construction of Culvetrs in ward no. 06 Bytarayanapura Sub Division. No: BBMP/EE/BTP/WO/38/2016-17.
Name of Agency	Sri. G. Manjunath
Grade of Concrete	M-20
Location	Drain
No. of cubes tested	3
Technical Reference	IS: 516-1959 (Reaffirmed 2013)

Sl. No.	ID	Dimension of specimen (mm)	Cross sectional area (mm^2)	Date of Casting	Date of Testing	Age at test (Days)	Weight (Kg)	Failure Load (KN)	Compressive Strength (N/mm^2)	Avg Compressive Strength (N/mm^2)
1	Sample-2	150.07 X 150.05 X 150.0	22518	17/06/2016	15/07/2016	28	8.19	485	**21.56**	**21.63**
2		150.06 X 150.04 X 150.0	22515				8.18	475	**21.11**	
3		150.04 X 150.03 X 150.0	22511				8.20	500	**22.22**	

Note:

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4. The results are based on the test conducted on samples supplied by the customer.

AE-06
n/a

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TEST REPORT

COMPRESSIVE STRENGTH TEST ON CONCRETE CUBES

Name & Address of the Customer	AEE, Byatarayanapura Sub Division, BBMP.
Name of Work	Improvements of drains and Construction of Culvetrs in ward no. 06 Bytarayanapura Sub Division. No: BBMP/EE/BTP/WO/38/2016-17.
Name of Agency	Sri. G. Manjunath
Grade of Concrete	M-20
Location	Drain
No. of cubes tested	3
Technical Reference	IS: 516-1959 (Reaffirmed 2013)

Sl. No.	ID	Dimension of specimen (mm)	Cross sectional area (mm^2)	Date of Casting	Date of Testing	Age at test (Days)	Weight (Kg)	Failure Load (KN)	Compressive Strength (N/mm^2)	Avg Compressive Strength (N/mm^2)
1	Sample-1	150.08 X 150.05 X 150.0	22520	17/06/2016	15/07/2016	28	8.21	495	**22.00**	**21.78**
2		150.07 X 150.06 X 150.0	22520				8.19	490	**21.78**	
3		150.06 X 150.05 X 150.0	22517				8.18	485	**21.56**	

Note:

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4. The results are based on the test conducted on samples supplied by the customer.

AE-06
n/a

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TEST REPORT

COMPRESSIVE STRENGTH TEST ON CONCRETE CUBES

Name & Address of the Customer	AEE, Byatarayanapura Sub Division, BBMP.
Name of Work	Improvements of drains and Construction of Culvetrs in ward no. 06 Bytarayanapura Sub Division. No: BBMP/EE/BTP/WO/38/2016-17.
Name of Agency	Sri. G. Manjunath
Grade of Concrete	M-15
No. of cubes tested	3
Technical Reference	IS: 516-1959 (Reaffirmed 2013)

Sl. No.	ID	Dimension of specimen (mm)	Cross sectional area (mm^2)	Date of Casting	Date of Testing	Age at test (Days)	Weight (Kg)	Failure Load (KN)	Compressive Strength (N/mm^2)	Avg Compressive Strength (N/mm^2)
1	CC Work	150.11 X 150.09 X 150.0	22530	15/06/2016	13/07/2016	28	8.19	360	**16.00**	**15.85**
2		150.03 X 150.05 X 150.0	22512				8.20	356	**15.82**	
3		150.04 X 150.06 X 150.0	22515				8.21	354	**15.73**	

Note:

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AE-06
n/a

Roopa.G
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CIVIL TECH LABS

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T-2654

To,

Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP,

15th July 2016

Dear Sir,

Sub: Improvements of drains and Construction of Culvetrs in ward no. 06 Bytarayanapura Sub Division.
No: BBMP/EE/BTP/WO/38/2016-17.
Testing of cubes – Reg.

As requested the 28th day Compressive Strength Test of Cubes was carried out for the above work for the samples supplied by you.

Please find the enclosed Test Report of the above.

Thanking you,

For Civil Tech Labs,

Roopa.G

CIVIL TECH LABS BANGALORE

(ROOPA G.)
Technical Manager

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TEST REPORT

TEST ON CEMENT

Name & Address of the Customer	AEE, Byatarayanapura Sub Division, BBMP.
Name of Work	Improvements of drains and Construction of Culvetrs in ward no. 06 Bytarayanapura Sub Division. No: BBMP/EE/BTP/WO/38/2016-17.
Name of the Agency	Sri. G. Manjunath
Date of Testing	01/06/2016

Tests	**Test Method As Per IS & Apparatus**		**Results**		**Requirements As Per IS 8112:1989**	**Remarks**
	IS Code	**Method**	**Value**	**Unit**		
Initial Setting Time	**IS-4031 (Part-5) 1988**	VICAT	49	min	Not Less Than 30 Minutes	Satisfies Requirement
Final Setting Time	**IS-4031 (Part-5) 1988**	VICAT	489	min	Not More Than 600 Minutes	Satisfies Requirement
Soundness	**IS-4031 (Part-3) 1988**	LE-CHATELIER	4	mm	Not More Than 10 mm	Satisfies Requirement

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AE-06
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TEST REPORT

GRADATION TEST ON COARSE AGGREGATES 40mm ↓ Graded

Name & Address of the Customer	AEE, Byatarayanapura Sub Division, BBMP.
Name of Work	Improvements of drains and Construction of Culvetrs in ward no. 06 Bytarayanapura Sub Division. No: BBMP/EE/BTP/WO/38/2016-17.
Name of Agency	Sri. G. Manjunath
Date of Testing	01/06/2016
Specific Gravity	**2.66**
Water Absorption	**0.28%**
Technical Reference	IS : 2386(Part I)–1963 (Reaffirmed 2011), IS : 2386 (Part III)–1963 (Reaffirmed 2011)

IS Sieve Designation (mm)	Sieve Analysis (% Passing IS Sieve)	Grading Requirement as per IS:383-1970 (Reaffirmed 2011)	Remarks
80	**100**	100	**Satisfies the requirement**
40	**98.9**	95-100	
20	**56.2**	30-70	
10	**25.7**	10-35	
4.75	**3.8**	0-5	

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TEST REPORT

GRADATION TEST ON FINE AGGREGATES

Name & Address of the Customer	AEE, Byatarayanapura Sub Division, BBMP.
Name of Work	Improvements of drains and Construction of Culvetrs in ward no. 06 Bytarayanapura Sub Division. No: BBMP/EE/BTP/WO/38/2016-17.
Name of Agency	Sri. G. Manjunath
Date of Testing	01/06/2016
Specific Gravity	**2.56**
Technical Reference	IS : 2386(Part I)–1963 (Reaffirmed 2011), IS : 2386 (Part III)–1963 (Reaffirmed 2011)

Sample	IS Sieve designation (mm)	Sieve Analysis (% Passing IS Sieve)	Grading Requirement as per IS:383-1970 (Reaffirmed 2011)				Grading Zone	Remarks
			ZONE-I	ZONE-II	ZONE-III	ZONE-IV		
River Sand	10	**100**	100	100	100	100	II	Satisfies the requirement
	4.75	**98.9**	90-100	90-100	90-100	95-100		
	2.36	**87.3**	60-95	75-100	85-100	95-100		
	1.18	**77.2**	30-70	55-90	75-100	90-100		
	0.6	**48.3**	15-34	35-59	60-79	80-100		
	0.3	**25.1**	5-20	8-30	12-40	15-50		
	0.15	**7.9**	0-10	0-10	0-10	0-15		

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AE-06
n/a

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TEST REPORT

TESTS ON REINFORCEMENT STEEL BAR 12 mm

Name & Address of the Customer	AEE, Byatarayanapura Sub Division, BBMP.
Name of Work	Improvements of drains and Construction of Culvetrs in ward no. 06 Bytarayanapura Sub Division. No: BBMP/EE/BTP/WO/38/2016-17.
Name of the Agency	Sri. G. Manjunath
Date of Testing	01/06/2016
Grade of Steel	Fe - 500.

Sl.No.	Description	Result	IS 1786-2008 Min. Requirements	Remarks
1	Measured Diameter mm	12	12	Satisfactory
2	Wt/m Length (Kg/m)	0.889	0.888	Satisfactory
3	Bend & RebendTest	Pass	Should not Crack or Fracture	Satisfactory
4	Elongation (%)	15.2	12	Satisfactory
5	Yield Stress(N/Sq.mm)	517	500	Satisfactory
6	U T S (N/Sq.mm)	574	545	Satisfactory

AE-06 n/a Onl

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Roopa.G

(ROOPA G.)
Technical Manager

CIVIL TECH LABS BANGALORE